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greatly to the interest of the work to have had a discussion of the climatic conditions based on the paleobotanical and other evidence at the command of the author.

While largely a matter of speculation, it would seem that the question of an Antarctic continent rather than the more restricted Gondwanaland in lower latitudes might have been considered with profit, although such a discussion might possibly be out of place in a publication of this sort, at any rate, its omission can in no wise be urged as a criticism of this admirable piece of work.

In the matter of nomenclature Arber is cautious, one might say conservative, throughout, and scant space is devoted to those species founded upon fragmentary and indefinite impressions. This 'lumping' process does not seem to be a defect, as many believe it to be in some of the preceding volumes of the British Museum Catalogues, although undoubtedly the actual abundance of species in nature is thereby probably underestimated.

In the genus *Glossopteris* the great variability of size and shape in the same species is emphasized, attention being called to the danger of founding species upon such characters as the thickness or persistence of the midrib, the obtuse or acute apex, or differences in the angles of divergence of the secondary veins, all characters more or less closely correlated with the size and shape of variable fronds. The only characters which seem reasonably safe in systematic work, until internal structures are known, are the average shape of the areoles and the openness or closeness of the secondary veins. In a revision from this viewpoint, confessedly artificial, the author reduces the large number of species of *Feistmantel* and others, to thirteen forms.

Considerable space is devoted to what little is known of the fructifications of this genus, and many other items of botanical interest are found throughout the work. Mr. Arber is to be congratulated for the way in which he has completed a difficult task, and paleobotanists owe him a debt of gratitude for the thorough way in which he has organized and systematized the literature and nomenclature of this most interesting and heretofore least known

flora. Some ninety-two species besides a number of indefinite remains are catalogued. The illustrations are ample and well executed, there being 8 plates and 51 text figures in addition to a map showing the supposed land areas of the Permo-Carboniferous. The systematic portion is preceded by a discussion of the botanical affinities of the flora, its distribution in space, its age and distribution in time, including specific and geologic tables of distribution and correlation, a historical sketch and a history of the collection. The bibliography is complete and the work taken as a whole merits nothing but the warmest praise.

EDWARD W. BERRY.

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*Chemie der alicyclischen Verbindungen.* Von OSSIAN ASCHAN, A. o. Professor an der Universität Helsingfors. Braunschweig, Fr. Vieweg und Sohn. 1905. Pp. xlv + 1164.

The alicyclic or polymethylene compounds, sometimes also called hexahydrobenzene derivatives, have, up to the present time, received rather stepmotherly treatment from text-book writers. Some of the substances have been described in connection with the aliphatic compounds, while others have been placed in the aromatic section. In short, like most other transition forms, their classification was troublesome and, except in so far as they were of use in connecting the two great families of organic compounds, they were kept as much in the background as possible. To some extent this was unavoidable; it is only in more recent years that it has been possible to prepare well-defined, crystalline derivatives, the study of which could lead to valid conclusions regarding the constitution of the parent substances; indeed, the preparation, in a state of purity, of many of the latter is attended often with very great experimental difficulty, and yet a fairly large number of the alicyclic compounds which occur in nature, such as camphor and various terpenes, are of considerable technical importance.

Professor Aschan's book marks the termination of this state of things, and already one of

the newest and best text-books of organic chemistry has its contents divided into the three sections of aliphatic, alicyclic and aromatic.

The author of a successful monograph must not only be an authority and expert in the subject, but he must make his collection of material as exhaustive as possible, arrange it clearly and systematically and indicate fresh lines of research; if, in addition, he possesses an attractive and concise style, such as is often *not* found in works of this kind published in the German language, the result of his labors is certain to be more than valuable. Professor Aschan's book amply fulfils all these requirements, and therefore the thanks of chemists are due to him for his exertions, and their congratulations on the manner in which he has discharged his task. Some idea of its magnitude will be gained when it is mentioned that more than 5,000 citations are embodied in the 1,200 pages which the book contains. These references to the literature of the subject are brought down to August, 1905. Only an extended use of the work will show how free it may be from error; as yet the reviewer has failed to detect any.

The book should certainly be obtained by all workers in organic chemistry, because they will find it most useful and interesting. Very appropriately, the author has dedicated it to Professor Adolf von Baeyer, in commemoration of his seventieth birthday.

J. BISHOP TINGLE.

#### SCIENTIFIC JOURNALS AND ARTICLES.

*The Museum News* of the Brooklyn Institute for April contains articles on 'How Insects are Protected' and 'How to Collect and Preserve Insects,' besides various shorter notes, one of which records the acquisition of a specimen of the rare African water-shrew, *Potamogale*. The collection of shells at the Children's Museum has been rearranged with a view to add to its interest and attractiveness.

*The Bulletin of the College of Charleston Museum* contains a brief sketch of Dr. Shecut and the origin of the museum, this being one

of the papers dealing with the 'History of the Museum.' There seems good reason to hope that the museum may obtain larger and more suitable quarters in the building known as the Thomson Auditorium.

#### SOCIETIES AND ACADEMIES.

##### THE AMERICAN MATHEMATICAL SOCIETY.

THE one hundred and twenty-eighth regular meeting of the American Mathematical Society was held at Columbia University on Saturday, April 28, 1906. President W. F. Osgood occupied the chair. Fifty members attended the two sessions. The council announced the election of the following ten persons to membership in the society: Rev. R. D. Carmichael, Hartselle, Ala.; Mr. F. L. Griffin, University of Chicago; Mr. W. R. Longley, University of Chicago; Mr. W. D. MacMillan, University of Chicago; Mr. F. W. Owens, Evanston Academy; Dr. J. J. Quinn, High School, Warren, Pa.; Mr. W. J. Risley, University of Illinois; Dr. R. P. Stephens, Wesleyan University; Mr. J. D. Suter, Iowa State College; Mr. A. M. Wilson, McKinley High School, St. Louis, Mo. Eighteen applications for membership were received. The total membership of the society is now five hundred and thirty.

Professor W. F. Osgood was appointed a member of the editorial committee of the *Transactions*, to succeed Professor E. W. Brown, who retires after seven years' service covering the entire period of existence of that journal.

The by-laws were amended to provide that only members of at least four years' standing shall be permitted to compound life membership.

The following papers were read at the meeting:

G. A. MILLER: 'Groups in which all the operators are contained in a series of subgroups such that any two of them have only identity in common.'

W. H. ROEVER: 'Lines of force illustrated by rotating carriage wheels.'

W. H. ROEVER: 'Systems of lines of force whose differential equations take Bernoulli's form in polar coordinates.'